



UNITED STATES PATENT AND TRADEMARK OFFICE

9/m
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,971	08/17/2001	Shun-An Chen	0941-0306P-SP	1826

2292 7590 08/05/2002

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

SUN, XIUQUIN

ART UNIT	PAPER NUMBER
----------	--------------

2863

DATE MAILED: 08/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/930,971

Applicant(s)

CHEN ET AL.

Examiner

Xiuqin Sun

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A-SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment dated Jul 3, 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCown et al. (U.S. Pat. No. 5067099).

McCown et al. teach an apparatus and method for dynamically monitoring system performance (see abstract; col. 4, lines 3-16 and lines 40-44), comprising: a process controller (namely, a process executor) for requesting a plurality of samples processed by the system to be inspected at a first sampling rate and receiving a plurality of inspection results (col. 7, lines 28-49); a data processor analyzing the inspection results from the process controller to determine a second sampling rate (col. 20, lines 27-52; col. 24, lines 53-68 and col. 25, lines 1-7); a device storing the second sampling rate (col. 25, lines 17-39); a controller receiving said second sampling rate from the storage device and changing said first sampling rate of the inspection requested by the process controller to said second sampling rate (col. 20, lines 27-52; col. 24, lines 53-68 and col. 25, lines 1-7); an input device connected to the storage device for inputting of user-defined data (such as a user-defined sampling rate) (col. 18, lines 15-26).

Art Unit: 2863

McCown et al. do not mention explicitly: a process executor, monitoring stability of manufacturing equipment; the samples processed by the system are a plurality of semi-manufactured products processed by manufacturing equipment.

It is deemed that the process controller taught by McCown et al. is of the same function as the process executor recited in claim 1, in the sense that it is capable of requesting a quality inspection of an object on an assembly line at a given sampling rate.

It is obvious that the apparatus and method taught by McCown et al. can be generic and applied to monitoring the stability of manufacturing equipment, because any manufacturing equipment can be treated as an individual system or a part of the system, and the stability of the system is simply one characteristics of the system performance. Similarly, it is obvious that the samples to be inspected, in the teachings of McCown et al., can be generic and include, for instance, a plurality of semi-manufactured products processed by manufacturing equipment.

Therefore, it would have been obvious to apply the McCown apparatus and method to a plurality of semi-manufactured products processed by manufacturing equipment in order to provide a system for dynamically monitoring the stability of manufacturing equipment.

3. Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCown et al. in view of Su et al. (U.S. Pat. No. 6260941).

Art Unit: 2863

McCown et al. teach a method and apparatus that includes the subject matter discussed above except that: a display connected to the storage device, displaying the first and the second sampling rates.

Su et al. teach a display coupled to a computer host, which includes a memory device, for displaying visual information to a user (col. 6, lines 37-40).

It would have been obvious to include the teaching of Su display in the McCown apparatus in order to provide a better system for dynamically monitoring stability of manufacturing equipment.

4. Claims 4-5 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCown et al. in view of Li (U.S. Pat. No. 6276997).

McCown et al. teach a method and apparatus that includes the subject matter discussed above except that: a semiconductor manufacturing process that is capable of etching the semi-manufactured products such as a wafer and a technique for forming an oxide layer on the semi-manufactured products.

Li discloses a method and system and teaches: a semiconductor manufacturing process that is capable of etching the semi-manufactured products such as a wafer (col. 5, lines 58-65); and a technique for forming an oxide layer on the semi-manufactured products (col. 2, lines 12-21).

It would have been obvious to include the teaching of Li semiconductor manufacturing process and Li oxide layer formation technique in the McCown apparatus in order to provide a better system for dynamically monitoring stability of manufacturing equipment.

Art Unit: 2863

5. Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCown et al. in view of Sandoval (U.S. Pat. No. 6345259).

McCown et al. teach a method and apparatus that includes the subject matter discussed above except that: the process executor is a Manufacturing Executive System (MES).

Sandoval teaches a Manufacturing Executive System (MES) that serves as a process executor used in a computer integrated manufacturing environment (col. 4, lines 27-33; col. 11, lines 6-16 and lines 29-41).

It would have been obvious to include the teaching of Sandoval MES in McCown apparatus in order to provide a better system for dynamically monitoring stability of manufacturing equipment.

6. Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCown et al. in view of Webster (U.S. Pat. No. 5505090).

McCown et al. teach a method and system that includes the subject matter discussed above except that: the inspection of the semi-manufacturing products is non-destructive.

Webster teaches a method and apparatus for non-destructive inspection of composite materials such as the semi-manufacturing products (see abstract) by sampling the products at a given sampling rate (col. 9, lines 32-50).

It would have been obvious to include the teaching of Webster technique for non-destructive inspection of semi-manufacturing products in McCown apparatus in order to provide a better system for dynamically monitoring stability of manufacturing equipment.

Art Unit: 2863

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCown et al. in view of Schmolke et al. (U.S. Pat. No. 6333785).

McCown et al. teach a method and system that includes the subject matter discussed above except that: using a thickness of an oxide layer and an etching depth as the standards for inspection.

Schmolke et al. teach a method in which the thickness of an oxide layer is used as the standard in inspecting a smooth surface of semiconductor wafers (col. 3, lines 45-60 and col.4, lines 1-5).

It would have been obvious to include the teaching of Schmolke inspection of thickness of an oxide layer in McCown system in order to provide a better system for dynamically monitoring stability of manufacturing equipment.

8. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCown et al. in view of Charles (U.S. Pat. No. 6335559).

McCown et al. teach a method and system that includes the subject matter discussed above except that: using a thickness of an oxide layer and an etching depth as the standards for inspection.

Charles teaches a method and device that can monitor the operation of etching a semiconductor wafer by inspecting the etching depth (col. 7, lines 36-53).

It would have been obvious to include the teaching of Charles inspection of etching depth in McCown system in order to provide a better system for dynamically monitoring stability of manufacturing equipment.

Art Unit: 2863

9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable McCown et al. in view of Hinkle (U.S. Pat. No. 6190313).

McCown et al. teach a method and system that includes the subject matter discussed above except that: the data processor is an SPC analyzing software application.

Hinkle teaches an Statistical Process Control (SPC) analyzing software application used as a data processor in processing and analyzing the data in question (see abstract; col. 2, lines 59-61 and col. 3, lines 49-61)

It would have been obvious to include the teaching of the Hinkle SPC analyzer in McCown system in order to provide a better system for dynamically monitoring stability of manufacturing equipment.

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCown et al. in view of Juskiewicz et al. (U.S. Pat. No. 6353169).

McCown et al. teach an apparatus and method that includes the subject matter discussed above except that: said controller is a server.

Juskiewicz et al. disclose a system that uses multiple sampling rates for system operation (col. 4, lines 43-45 and col. 20, lines 30-37) and teaches a controller that has the capability of converting sampling rates (col. 13, lines 24-38), and the controller is of the functionality of a server (col. 3, lines 62-65).

It would have been obvious to include the teaching of Juskiewicz et al. server type of controller in the McCown apparatus to dynamically control the change of the

Art Unit: 2863

sampling rate in order to provide a better system for monitoring the stability of manufacturing equipment.

Response to Arguments

11. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

Claims 1-13 are rejected as new art (U.S. Pat. No. 5067099) has been found to teach the following subject matter: a system for dynamically monitoring the stability of manufacturing equipment; a process executor that is capable of requesting a quality inspection of an object on an assembly line at a given sampling rate; a data analyzer coupling with the process executor to determine a sampling rate dynamically; and a memory device storing system operation parameters such as the sampling rate. In view of the teachings of the new art reference, one having ordinary skill in the art would be able to apply the same technique to carry out the method for monitoring stability of manufacturing equipment. The mere application of a known technique to a different instance by those skilled in the art would have been obvious.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiuqin Sun whose telephone number is (703)305-3467. The examiner can normally be reached on 7:00am-4:30pm.

Art Unit: 2863

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Hilten can be reached on (703)308-0719. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-5841 for regular communications and (703)308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

KS

XS

August 1, 2002



JOHN S. HILTEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800